

# UMATILLA RIVER BASIN TRAP AND HAUL PROGRAM

8802200

## SHORT DESCRIPTION:

Provide low-water passage for fish in the lower Umatilla River by transporting smolts and adults around irrigation diversions. Coordinate operation of passage facilities and flow enhancement projects to provide adequate passage conditions. Project has immediate survival benefits for spring & fall chinook, coho, and steelhead.

## SPONSOR/CONTRACTOR: CTUIR

Confederated Tribes of the Umatilla Indian Reservation  
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## SUB-CONTRACTORS:

Oregon Department of Fish and Wildlife

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## GOALS

### GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations

### ANADROMOUS FISH:

Habitat or tributary passage

### NPPC PROGRAM MEASURE:

7.10 and 7.4I

### RELATION TO MEASURE:

Project provides tributary passage benefits for juvenile and adult salmonids produced from artificial production facilities in the basin. Project also responsible for collection and transportation of broodstock for Umatilla artificial production programs.

### TARGET STOCK

Umatilla River/Tanner Creek Coho

### LIFE STAGE

Smolt/Adult

### MGMT CODE (see below)

S

Umatilla River/Mid-Columbia Bright Fall Chinook

Smolt/Adult

S

Umatilla River/Carson Spring Chinook

Smolt/Adult

S

Umatilla River Summer Steelhead

Smolt/Adult

S, W

### AFFECTED STOCK

Snake River Fall Chinook

### BENEFIT OR DETRIMENT

Beneficial

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## BACKGROUND

### Stream name:

Umatilla River

### Subbasin:

Umatilla

### Stream miles affected:

100+

### HISTORY:

Beginning in the early 1980's, the Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish & Wildlife began implementing a comprehensive plan to supplement steelhead and re-establish salmon runs in the Umatilla River Basin. Part of this effort included the construction of fish passage facilities in the lower river. The Threemile Dam adult trap was completed and the required fish transportation units were obtained in 1988. The Westland juvenile trap and bypass facility was completed in 1990. Other lower river passage facilities have been constructed by BPA in the early to mid 1990's. The Trap and Haul project is an integral part of this passage effort. The project operates these facilities to provide adequate fish passage and survival conditions by trapping and hauling fish during low flow situations and coordinating the use of flow enhancement projects and passage facilities to optimize migration conditions during other periods.

### **BIOLOGICAL RESULTS ACHIEVED:**

Salmon runs were extinct in the Umatilla River Basin prior to implementation of the Umatilla Fish Restoration Program. This plan, of which the Trap and Haul project is a key component, has resulted in annual returns of 3,300 to 8,000 adult salmon and steelhead to the Umatilla River over the last 10 years. This project has been responsible for transporting from 5,000 to 3,000,000 salmon and steelhead smolts and 1,000 to 4,000 adults annually. The project is also responsible for ensuring that smolts and adults not hauled have adequate passage conditions. The survival of these fish would have otherwise been in jeopardy. The project also collects and transports broodstock trapped from the Umatilla River.

### **PROJECT REPORTS AND PAPERS:**

Contractor submits both monthly and annual reports to BPA. Annual reports are available for each year since inception.

### **ADAPTIVE MANAGEMENT IMPLICATIONS:**

The project is continually learning how to more effectively operate and integrate both existing and new passage facilities, trapping facilities, and flow enhancement programs to increase the survival of smolts leaving the Umatilla River and adults migrating upstream to natural production areas. Increases in smolt numbers entering the Columbia River directly addresses the Council's rebuilding goals by increasing the number of adults that return to the Columbia and Umatilla Rivers. In addition, the project makes management recommendations based on observations of migration and adult returns which are incorporated into the Umatilla Basin and Hatchery Annual Operating Plan.

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## **PURPOSE AND METHODS**

### **SPECIFIC MEASUREABLE OBJECTIVES:**

Coordinate trap & haul, flow enhancement, and physical passage facilities to provide adequate passage conditions on an annual basis for salmon and steelhead smolts and adults migrating through the lower Umatilla River. Operate both adult and juvenile traps to provide information regarding population sizes, timing, health, etc. Collect broodstock required to maintain Umatilla programs and provide a management tool for maintaining the genetic and biological diversity of the Umatilla River target populations.

### **CRITICAL UNCERTAINTIES:**

The most important life history stages potentially impacted in the Umatilla Basin are adult and juvenile passage in the lower river. Without this project to provide passage and survival benefits for both adults and juveniles, it is uncertain whether the Umatilla Basin restoration program would have any chance of success in achieving its adult return goals. Critical uncertainties related to the success of the project but outside of project control include annual Umatilla flow conditions, survival of adults and juveniles in the mainstem migration corridor and ocean conditions all of which may mask benefits realized in the Umatilla River by the project. No risks have been identified with implementation of the project.

### **BIOLOGICAL NEED:**

The project provides safe transportation for juvenile and adult migrants during periods when the lower Umatilla River does not provide adequate flow conditions for natural migration. The project also coordinates operation of flow enhancement programs to improve flow conditions and decrease the periods when inadequate passage conditions exist. In addition, during time of adequate natural migration conditions, the project ensures fish passage facilities are operated to provide optimal passage conditions past man made diversions systems. The project also operates the adult trap in the lower Umatilla River providing a valuable tool for managing returning adult populations.

### **HYPOTHESIS TO BE TESTED:**

N/A

### **ALTERNATIVE APPROACHES:**

An alternative approach has been identified (Umatilla Basin Project) and is currently being implemented. However, the Umatilla Basin Project, while reducing the requirement for trap and haul, will not eliminate it. In addition, the project is already adaptively changing from primarily providing physical transport to being the main vehicle for operation of the comprehensive flow enhancement programs being implemented in the basin.

**JUSTIFICATION FOR PLANNING:**

N/A

**METHODS:**

The project involves operation of trapping facilities and associated hauling equipment to safely catch, transport, and release adult and juvenile salmon and steelhead in the lower Umatilla River. The project also has primary responsibility for operation and coordination of the physical passage facilities and flow enhancement programs to optimize passage conditions for both upstream and downstream migrants.

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**PLANNED ACTIVITIES****SCHEDULE:**

| <u>Planning Phase</u> | <u>Start</u> 1988 | <u>End</u> 1988 | <u>Subcontractor</u> |
|-----------------------|-------------------|-----------------|----------------------|
|-----------------------|-------------------|-----------------|----------------------|

|                                      |  |  |  |
|--------------------------------------|--|--|--|
| <u>Task</u> Develop project outline. |  |  |  |
|--------------------------------------|--|--|--|

| <u>Implementation Phase</u> | <u>Start</u> 1988 | <u>End</u> 1989 | <u>Subcontractor</u> |
|-----------------------------|-------------------|-----------------|----------------------|
|-----------------------------|-------------------|-----------------|----------------------|

|   |  |  |  |
|---|--|--|--|
| <u>Task</u> Obtain project hauling equipment and begin operation of passage facilities. |  |  |  |
|---|--|--|--|

| <u>O&amp;M Phase</u> | <u>Start</u> 1989 | <u>End</u> On-going | <u>Subcontractor</u> |
|----------------------|-------------------|---------------------|----------------------|
|----------------------|-------------------|---------------------|----------------------|

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|--|--|--|--|
| <u>Task</u> Continue efforts to provide for passage of adult and smolt salmonids under low-flow river conditions. Continue shake-down at facilities and refine operational criteria. Adaptively change project in the future to operation and coordination of the various passage improvement projects as flow enhancement programs increase stream flows and the need for artificial transportation decreases. Continue BPA funding of ODFW and CTUIR to operate Trap and Haul program. |  |  |  |
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**PROJECT COMPLETION DATE:**

On-going

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**OUTCOMES, MONITORING AND EVALUATION****SUMMARY OF EXPECTED OUTCOMES****Expected performance of target population or quality change in land area affected:**

Outcome is known. With the project, adequate survival rates can be maintained to ensure continued returns of salmon and steelhead. Without the project, passage conditions would reduce survival to levels where continued success of returns would be jeopardized.

**Present utilization and conservation potential of target population or area:**

Annual returns ranging from 400 to 2,500 adults for each of the four targeted species.

**Assumed historic status of utilization and conservation potential:**

Three of the four targeted Umatilla species populations were extinct for over seventy years.

**Long term expected utilization and conservation potential for target population or habitat:**

Umatilla Hatchery Master Plan identifies adult return goals for each species.

**Contribution toward long-term goal:**

Increases in passage survival and subsequent adult returns.

**Indirect biological or environmental changes:**

Increases to wildlife habitat and production of non-target resident fish stocks by improved water conditions in the lower river.

**Physical products:**

Up to 3,000,000 smolts, 4,000 adults, and 1,000 broodstock have been hauled on an annual basis. In addition, up to 8,000 adults are trapped annually.

**Environmental attributes affected by the project:**

Flows in the Umatilla River are directly affected by project decisions regarding flow enhancement.

**Changes assumed or expected for affected environmental attributes:**

More consistent and adequate flow conditions for anadromous salmonid migration and natural production.

**Measure of attribute changes:**

N/A

**Assessment of effects on project outcomes of critical uncertainty:**

N/A

**Information products:**

Project monthly and annual reports provide information on water flows, passage conditions, adult returns, and smolt outmigration.

**Coordination outcomes:**

Spring 1993 provided the first operational experience with enhanced flows. Increasing participation and coordinating logistics between the various parties during flow enhancement efforts has improved in the years since.

**MONITORING APPROACH**

The project is involved with many other associated projects in the Umatilla Basin and performance outcome of Trap & Haul is largely dependent on the results from these other projects. It is very difficult to assess what measurements could be made to determine that the project is being successful. Since project inception, goals for broodstock collection, adult disposition, and data collection have been met but these are secondary goals compared to insuring adequate passage conditions exist.

**Provisions to monitor population status or habitat quality:**

The adult trapping facility at Three Mile Dam operated by the project provides one of the most comprehensive tributary monitoring opportunities in the region for assessing population status of target stocks. The Westland juvenile trap and bypass facility also provides the ability to monitor juvenile outmigration.

**Data analysis and evaluation:**

Most of the information and data collected by the project is supplied to associated M & E projects for detailed analysis and/or evaluation.

**Information feed back to management decisions:**

Adaptive management decisions are made every year by basin co-managers based on recommendations or information supplied by the project. These decisions are incorporated into the Umatilla Basin and Hatchery Annual Operating Plan.

**Critical uncertainties affecting project's outcomes:**

Good question!

**EVALUATION**

As mentioned in the Monitoring Approach section above, specific measure will be hard to identify.

**Incorporating new information regarding uncertainties:**

Again, any information that changes the operations or goals of the project are incorporated through the Umatilla Basin and Hatchery Annual Operating Plan.

#### **Increasing public awareness of F&W activities:**

Locally, the Three Mile Dam adult facility is very visible to the public and information regarding adult returns is supplied to the public on a regular basis. The facility is also a very popular attraction for both public and private tours.

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## **RELATIONSHIPS**

### **RELATED BPA PROJECT**

8710001 Umatilla River Basin Anadromous Fish Habitat E

9000501 Umatilla Basin Natural Production M & E

9101400 Umatilla Hatchery Satellites - Design & Construction

8343500 Umatilla Hatchery Satellite Facilities O & M

8403300 Umatilla Hatchery O & M

### **RELATIONSHIP**

All listed projects, along with Trap & Haul, are components of the overall Umatilla Basin Restoration Program. The Trap & Haul project is specifically related to these other projects by providing adequate passage conditions for both juveniles and returning adults; broodstock collection; and adult return data.

### **RELATED NON-BPA PROJECT**

Umatilla Basin Project/USBR

### **RELATIONSHIP**

Part of overall Umatilla Basin Restoration Program

#### **OPPORTUNITIES FOR COOPERATION:**

The Trap and Haul Project is a model for cooperation between diverse interest groups as it provides a fish passage "contingency plan" during low flow periods while the well established irrigation interests also remain intact. The project also coordinates the operation of the USBR funded Umatilla Basin Project and BPA funded passage facilities with ODFW, ODWR, and local irrigation districts to provide adequate flow and fish passage conditions in the lower Umatilla Basin. The BPA funded fish screen and trapping facilities operated by the project are maintained under the direction of USBR and local irrigation districts. ODFW is a subcontractor to the project and a cooperator in the Umatilla River Fish Restoration Program. ODFW and USFWS produce hatchery smolts which the project transports through the lower Umatilla River. ODFW also operates and maintains juvenile fish screens which are monitored by the project for fish passage. NMFS develops fish passage and screening criteria for the facilities the project operates. The project also assists in the transportation of adults and juveniles to the basin as well as the collection and transportation of broodstock needed for the Umatilla River Fish Restoration Program.

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## **COSTS AND FTE**

**1997 Planned:** \$295,712

#### **FUTURE FUNDING NEEDS:**

| <b><u>FY</u></b> | <b><u>\$ NEED</u></b> | <b><u>% PLAN</u></b> | <b><u>% IMPLEMENT</u></b> | <b><u>% O AND M</u></b> |
|------------------|-----------------------|----------------------|---------------------------|-------------------------|
| 1998             | \$435,000             | 0%                   | 0%                        | 100%                    |
| 1999             | \$460,000             | 0%                   | 0%                        | 100%                    |
| 2000             | \$480,000             | 0%                   | 0%                        | 100%                    |
| 2001             | \$500,000             | 0%                   | 0%                        | 100%                    |
| 2002             | \$500,000             | 0%                   | 0%                        | 100%                    |

#### **PAST OBLIGATIONS (incl. 1997 if done):**

| <b><u>FY</u></b> | <b><u>OBLIGATED</u></b> |
|------------------|-------------------------|
| 1987             | \$176,175               |
| 1989             | \$200,544               |
| 1990             | \$139,773               |
| 1991             | \$109,895               |
| 1992             | \$643,542               |
| 1993             | \$1,421                 |
| 1994             | \$281,517               |
| 1995             | \$414,003               |
| 1996             | \$382,239               |
| 1997             | \$295,712               |

TOTAL: \$2,644,821

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

**LONGER TERM COSTS:** Expected annual cost of \$400,000 to \$500,000.  
For annual operation and maintenance.

**1997 OVERHEAD PERCENT:** 34%

**HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:**

This percentage applies to all direct project costs within the CTUIR portion of the contract. The CTUIR indirect rate does not apply to subcontracted costs.

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